

Hornet Safetygram from the Fighting Swordsmen of VFA-32



When was the last time, during the ORM portion of your admin brief, someone admitted it was a hazard that they were tired? Those words are hardly ever spoken. When was the last time you nodded off while listening to a brief? When was the last time you flew while tired? Maybe we should ask when was the last time you didn't fly tired. The constraints on our time are numerous: ground jobs, SFWT, new tactics, families, significant others and social obligations come to mind. Fatigue can be an everyday occurrence in our lives; there just isn't enough time in the day to accomplish everything we need to do. But how often do we identify fatigue as a serious risk to mission accomplishment? The intent of this safetygram is to raise awareness on the hazard of fatigue.

We are well-trained professionals who would never fly while drunk, but, we all find it acceptable, and perhaps necessary, to fly when fatigued. These situations appear to be completely different, but upon closer examination they are not.

Capt. Nicholas Davenport, MC, USN (FS) from the School of Aviation Safety, conducted an informal review of data from mishaps and hazreps from 1997-2002. His review showed that fatigue was the second highest aeromedical causal factor after spatial disorientation. Alcohol was grouped with medication usage and illness—it was located near the bottom of those causal factors. This would lead us to believe that fatigue is a much more serious risk than alcohol use, but common sense tells us otherwise. As Capt. Davenport points out in his paper "Fatigue in Naval Aviation," aviators correctly observed that this data is skewed, since we know better than to fly while drinking – it's prohibited by NATOPS. If you look at Chapter 8 on rest, sleep and flight time (see page 11), you'll find some suggested guidance on what is ideal, but little in the way of mandated rules. So the denominator for flying while drunk is much smaller

than it is for those flying fatigued—we know better! That's why it appears that fatigue is a greater risk—the number exposed to this hazard is much greater.

There have been many studies on the comparison of fatigue and alcohol on psychomotor performance. Collectively, the research shows that alcohol and fatigue produce similar levels of performance degradation. A 1997 study by Australian researchers, as reported in the publication *Nature*, showed that at 21 hours without sleep, the effect on performance was equivalent to someone who had a blood alcohol content (BAC) of .08, legally drunk. While you may view this as an extreme situation, the equivalent BAC of someone who had 18 hours of wakefulness was approximately .06. Recall, 18 hours is the maximum authorized crew day according to OPNAVINST 3710.7T

Now that we know the risks associated with fatigue, we need to address the symptoms that we may see in our squadronmates. Since we have all experienced fatigue, these will look familiar: irritability, mood deterioration, reduced patience, impaired communication, reduced attention, increased tolerance for error and risk, task fixation, reduced motivation, increased reaction times, and nodding off. It is essential to recognize these telltale signs in others because we then have the ability to intervene and prevent a mishap.

In addition, we have a personal responsibility to prevent fatigue in ourselves. By making the proper decisions that allow us to get a restful night's sleep, we can both reduce the potential for mishaps because of fatigue and increase our combat effectiveness.

Fatigue is a hazard that will never go away. I hope this safetygram has raised awareness and fosters discussions in your ready rooms. Your squadron flight surgeons are your best source of information regarding fatigue and will offer more insight and controls to mitigate the risks.—LCdr. Pete Hagge, VFA-32 safety officer.

THE BOOK SAYS...



Photo by Matthew J. Thomas.

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8.3.2.1 Rest and Sleep

8.3.2.1.1 Flight Crew and Flight Support Personnel. Commanders should make available eight hours for sleep during every 24-hour period. Schedules will be made with due consideration for watch standing, collateral duties, training, and off-duty activities.

8.3.2.1.2 Flight Crew. Ground time between flight operations should be sufficient to allow flight crew to eat and obtain at least 8 hours of uninterrupted rest. Flight crew should not be scheduled for continuous alert and/or flight duty (required awake) in excess of 18 hours. If it becomes necessary to exceed the 18-hour rule, 15 hours of continuous off-duty time shall be provided.

8.3.2.1.3 Circadian Rhythm. Circadian rhythms are cyclic fluctuations of numerous body functions that are set like a "biological clock" to a local time or sleep/awake periods. Changing local sleep/awake periods or rapidly crossing more than three time zones disrupts circadian rhythms and can cause a marked decrease in performance. This condition, called "jet lag," is compounded by illness, fatigue, or drugs, and is resolved only by accommodation to the new local time or sleep/awake period. The accommodation period can be estimated by allowing 1 day for every hour in excess of 3. Accommodation begins when a new daily routine is established. During that period, aircrew are not grounded but can be expected to perform at a less than optimal level. Closer observation by the flight surgeon during the period may be desirable.

8.3.2.2 Flight Time. Precise delineation of flight time limitations is impractical in view of the varied conditions encountered in flight operations. Required preflight/postflight crew duty time must be given due consideration. The following guidelines are provided to assist commanding officers:

- Daily flight time should not normally exceed three flights or 6-1/2 total hours flight time for flight personnel of single-piloted aircraft. Individual flight time for flight personnel of other aircraft should not normally exceed 12 hours. The limitations assume an average requirement of 4 hours ground time for briefing and debriefing.
- Weekly maximum flight time for flight personnel of single-piloted aircraft should not normally exceed 30 hours. Total individual flight time for flight personnel of other aircraft should not

exceed 50 hours. When practicable, flight personnel should not be assigned flight duties on more than 6 consecutive days.

- Accumulated individual flight time should not exceed the number of hours indicated in Figure 8-4.

PERIOD (DAYS)	SINGLE PILOTED AIRCRAFT	MULTI-PILOTED (PRESSURIZED) AIRCRAFT	MULTI-PILOTED NON-PRESSURIZED AIRCRAFT	MULTI-PILOTED PRESSURIZED AIRCRAFT
1	6.5	12	12	12
7	30	50	50	50
30	65	80	100	120
90	145	200	265	320
365	595	720	960	1120

Figure 8-4. Maximum Recommended Flight Time

- When the tempo of operations requires individual flight time in excess of the guidelines in Figure 8-4 or paragraphs 8.3.2.2.a and 8.3.2.2.b, flight personnel shall be closely monitored and specifically cleared by the commanding officer on the advice of the flight surgeon. Aviation-capable ships that do not have access to flight surgeons for waiving flight time limitations should utilize available general medical officers for medical evaluation. Comments should be made with regard to stress level and adequacy of rest and nutrition. Authorization from the squadron commanding officer and flight surgeon can then be made via message. Commanding officers should assure equitable distribution of flight time commitments among assigned flight personnel, commensurate with additional ground duties that each may be assigned.

Note

Flight operations involving contour, map of the earth, chemical defense gear, night and night vision devices, and adverse environmental factors (dust, cloud cover, precipitation, etc.) are inherently more stressful and demanding than flying day VFR. The resultant fatigue may have a profound physiological effect upon mission capability. Mission planners should take this physiological threat into account in making modifications to normal crew rest/crew day guidelines.